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COMMITTEE ON THE PEACEFUL
USES OF OUTER SPACE

INFORMATION FURNISHED IN CONFORMITY WITH GENERAL ASSEMBLY RESOLUTION 1721 B (XVI) BY STATES LAUNCHING OBJECTS INTO ORBIT OR BEYOND

Note verbale dated 22 November 1993 from the Permanent Mission of Italy to the United Nations addressed to the Secretary-General

The Permanent Mission of Italy to the United Nations presents its compliments to the Secretary-General of the United Nations and has the honour to transmit information concerning the satellite TEMISAT, as requested in General Assembly resolution 1721 B (XVI), paragraph 1, of 20 December 1961 on international cooperation in the peaceful uses of outer space. The information is contained in the annex to the present document.

Annex

REGISTER OF OBJECTS LAUNCHED INTO OUTER SPACE

1. Name of the satellite: TEMISAT (TElespazio MIcro SATellite)

2. Launch:

(a)	Launching vehicle:	Russian Launcher TSYCLON
(b)	Launch type:	Copassenger of METEOR 2 Satellite
(c)	Date:	31 August 1993
(d)	Place:	Plesetsk (Russian Federation)

3. Orbital parameters:

(a)	Orbit type:	Circular with eccentricity less than 0.0001
(b)	Altitude:	950 km
(c)	Inclination:	82.5°
(d)	Drift of the ascending node of orbital plane:	0.8° /d westwards

4. TEMISAT general functions:

The TEMISAT programme allows the implementation of a data collection and distribution service for geophysical environmental monitoring, through a micro-satellite called TEMISAT and based on the Autonomous Managed Network.

This Network adopts very innovative and effective communications technologies to environmental protection services.

The main applications are:

Pollution monitoring
Basin level monitoring
Oceanographic monitoring
Snow level monitoring
Traffic monitoring
Monitoring of the structures (buildings, dams etc.)
Geological monitoring
Seismic monitoring
Climatological monitoring

The environmental data, whose measurements are acquired through sensor subsystems, are collected, temporarily stored on the ground and logged by an autonomous and automatic terminal until the uploading request is received from TEMISAT. Once the data are received on board, they are transmitted from TEMISAT to user data collection centres.

5. TEMISAT system architecture:

The system is composed of two micro-satellite units with low cost satellite based TDMA/SCPC scheme, the Mission Control Centre and two different types of terminal: Collection Centre Terminal and User Terminal.

(a) TEMISAT space segment

The TEMISAT space segment consists of two micro-satellites.

These are professional micro-satellites, which for the first time introduce a low-cost satellite based TDMA/SCPC access scheme. The expected operational life of each satellite is five years.

The major characteristics of the satellites are:

High reliability
Full redundancy
Store-and-forward service
Direct or on request access

(b) TEMISAT ground segment

The TEMISAT ground segment consists of the Mission Control Centre.

This Centre processes, manages and stores the mission data and prepares the user routing matrix, which contains the polling sequence, the synchronization and the addressee identification codes.

The Mission Control Centre is responsible for:

Mission planning
Polling optimization

(c) TEMISAT user segment

The TEMISAT user segment consists of two different types of terminal:

Data Collection Centre Terminal (DC)
User Terminal (UT)

The user terminals are connected with the block of sensors, which are set for acquiring measurements and for storing them temporarily.

As soon as the satellite polls the user terminals, the commands exchange between the interface user terminal equipment and sensor terminal adopting the standard RS232, will make available the data for the packetizations and transmission provided by the User Terminal equipment.

The main characteristics of the User Terminal are:

Standard interfaces
Low power consumption
Easy installation

The Data Collection Centre is able to receive the down-link flow data from TEMISAT corresponding to all the information collected from the user terminals belonging to its Closed User Group (CUG).

The main characteristics of the Data Collection Centre are:

High flexibility
CUG control
Low cost and low complexity

6. Characteristics of the satellite:

(a)	Mass	42 kg
(b)	Dimension	35x35x35 cm
(c)	Electric power	62 W (max)
(d)	Attitude control	2 magnetic coil 1 Am**2
(e)	On-board memories	2 of 8.5 Mbytes each
(f)	Lifetime	5 years